

## Supplementary Appendix

This appendix has been provided by the authors to give readers additional information about their work.

Supplement to: Rea TD, Fahrenbruch C, Culley L, et al. CPR with chest compression alone or with rescue breathing. *N Engl J Med* 2010;363:423-33.

**Table 1.** Outcomes restricted to those for whom the intervention progressed to chest compressions

Outcome	All sites				Two sites with neurological outcome status			
	Instruction Type		Absolute Difference (95% CI) †	p-value	Instruction Type		Absolute Difference (95% CI) †	p-value
Chest Compression alone (n=790)	Chest compression plus rescue breathing (n=698)	Chest Compression alone (n=507)			Chest compression plus rescue breathing (n=429)			
Pulses at the end of EMS care, % (n)	34.1 (264/775)	29.7 (204/686)	4.3 (-0.5, 9.1)	0.077	42.2 (214/507)	34.7 (149/429)	7.5 (1.2, 13.6)	0.019
Survival to hospital discharge, % (n)	11.9 (94/787)	9.9 (69/694)	2.0 (-1.2, 5.2)	0.22	16.6 (84/507)	13.8 (59/429)	2.8 (-1.9, 7.4)	0.23
CPC 1 or 2 at hospital discharge, % (n)	--	--	--	--	14.0 (71/507)	10.5 (45/429)	3.5 (-0.8, 7.7)	0.10

\* CI denotes confidence interval, and EMS emergency medical services.

† The absolute difference in outcome between the two groups was derived by subtracting the value for the group assigned to chest compressions plus rescue breathing from the value for the group assigned to chest compressions alone.

‡ In the Cerebral Performance Category (CPC) classification, category 1 represents good cerebral performance, 2 moderate cerebral disability, 3 severe cerebral disability, 4 coma or vegetative state, and 5 death.



<i>Witnessed</i>		<i>Unwitnessed</i>		<i>EMS RESPONSE AMONG WITNESSED ARRESTS</i>		<i>&lt;= 6 minutes</i>		<i>&gt; 6 minutes</i>	
Pulses at the end of EMS care, % (n)	46.6 (153/328)	42.0 (120/286)	4.6 (-3.2, 12.5)	0.24	55.4 (128/231)	46.1 (89/193)	9.3 (-0.3, 18.6)	0.056	
Survival to hospital discharge, % (n)	20.8 (69/332)	17.5 (51/291)	3.3 (-3.0, 9.4)	0.30	26.4 (61/231)	22.3 (43/193)	4.1 (-4.1, 12.2)	0.33	
CPC 1 or 2 at hospital discharge, % (n)	--	--	--	--	22.9 (53/231)	17.1 (33/193)	5.8 (-1.9, 13.3)	0.14	
<i>Unwitnessed</i>		<i>Unwitnessed</i>		<i>Unwitnessed</i>		<i>Unwitnessed</i>		<i>Unwitnessed</i>	
Pulses at the end of EMS care, % (n)	24.5 (109/444)	21.1 (84/399)	3.4 (-2.2, 9.1)	0.23	30.8 (84/273)	25.5 (60/235)	5.3 (-2.6, 12.9)	0.19	
Survival to hospital discharge, % (n)	5.3 (24/451)	4.5 (18/401)	0.8 (-2.2, 3.8)	0.58	8.1 (22/273)	6.8 (16/235)	1.3 (-3.5, 5.9)	0.59	
CPC 1 or 2 at hospital discharge, % (n)	--	--	--	--	6.2 (17/273)	5.1 (12/235)	1.1 (-3.2, 5.3)	0.59	
<b>EMS RESPONSE AMONG WITNESSED ARRESTS</b>									
<i>&lt;= 6 minutes</i>									
Pulses at the end of EMS care, % (n)	58.4 (90/154)	48.9 (64/131)	9.5 (-2.0, 20.8)	0.11	63.8 (83/130)	50.5 (52/103)	13.3 (0.6, 25.6)	0.04	
Survival to hospital discharge, % (n)	29.2 (45/154)	22.0 (29/132)	7.2 (-3.0, 17.1)	0.16	32.3 (42/130)	24.3 (25/103)	8.0 (-3.7, 19.2)	0.18	
CPC 1 or 2 at hospital discharge, % (n)	--	--	--	--	27.7 (36/130)	20.4 (21/103)	7.3 (-3.9, 17.9)	0.20	
<i>&gt; 6 minutes</i>									
Pulses at the end of EMS care, % (n)	36.2 (63/174)	36.1 (56/155)	0.1 (-10.3, 10.3)	0.99	44.6 (45/101)	41.1 (37/90)	3.5 (-10.5, 17.1)	0.63	
Survival to hospital discharge, % (n)	13.5 (24/178)	13.8 (22/159)	-0.3 (-7.9, 7.0)	0.93	18.8 (19/101)	20.0 (18/90)	-1.2 (-12.6, 10.0)	0.84	
CPC 1 or 2 at hospital discharge, % (n)	--	--	--	--	16.8 (17/101)	13.3 (12/90)	3.5 (-7.0, 13.6)	0.50	

\* CI denotes confidence interval, and EMS emergency medical services.  
† The absolute difference in outcome in chest compressions between the two groups was derived by subtracting the value for the group assigned to chest compressions plus rescue breathing from the value for the group assigned to chest compressions alone.  
‡ In the Cerebral Performance Category (CPC) classification, category 1 represents good cerebral performance, 2 moderate cerebral disability, 3 severe cerebral disability, 4 coma or vegetative state, and 5 death.

**Figure 1.** Dispatcher CPR instructions

Chest compression alone

1. Get the phone **NEXT** to the person, if you can.
  
2. Listen carefully. I'll tell you what to do.
  - Get them **FLAT** on their **back on the floor**.
  - **BARE** the chest.
  - **KNEEL** by their side.
  - Put the **HEEL** of your **HAND** on the **CENTER** of their **CHEST**, right **BETWEEN** the **NIPPLES**.
  - Put your **OTHER HAND ON TOP** of **THAT** hand.
  - **PUSH DOWN FIRMLY, ONLY** on the **HEELS** of your hands, **2 inches**.
  - Do it **50** times, just like you're **PUMPING** the chest. Count **OUTLOUD 1-2-3..** (correct rate if needed)
  - **MAKE SURE THE HEEL** of your hand is in the center of the chest right between the nipples.
  - **KEEP DOING IT. KEEP PUMPING THE CHEST UNTIL HELP CAN TAKE OVER.**
  - I'll stay on the line.

Chest compression plus ventilation

1. Get the phone **NEXT** to the person, if you can.
  
2. Listen carefully. I'll tell you what to do.
  - Get them **FLAT** on their **back on the floor**.
  - **BARE** the chest.
  - **KNEEL** by their side.
  - **PINCH** their nose
  - With your **OTHER** hand, **LIFT** the **CHIN** so the head **BENDS BACK**.
  - **COMPLETELY COVER** their mouth with your mouth.
  - **GIVE 2 BREATHS OF AIR**
  - **THEN COME BACK TO THE PHONE.**
  
3. Listen carefully, I will tell you what to do next.
  - Put the **HEEL** of your **HAND** on the **CENTER** of their **CHEST**, right **BETWEEN** the **NIPPLES**.
  - Put your **OTHER HAND ON TOP** of **THAT** hand.
  - **PUSH DOWN FIRMLY, ONLY** on the **HEELS** of your hands, **2 inches**.
  - Do it **15** times, just like you're **PUMPING** the chest. Count **OUTLOUD 1-2-3..** \*(correct rate if needed)
  - **MAKE SURE THE HEEL** of your hand is in the center of the chest right between the nipples.
  - Pump **15** times
  - Then **PINCH** the nose, **LIFT** the **CHIN** so the head **BENDS BACK**.
  - **2 MORE** breaths and then **PUMP** the **CHEST** 15 times.
  - **KEEP DOING IT. PUMP THE CHEST 15 TIMES. Then 2 BREATHS.**
  - **KEEP DOING IT UNTIL HELP CAN TAKE OVER.**
  - I'll stay on the line.